

PROGRESS OF MEDICAL SCIENCE

SURGERY

UNDER THE CHARGE OF

T. TURNER THOMAS, M.D.,

ASSOCIATE PROFESSOR OF APPLIED ANATOMY AND ASSOCIATE IN SURGERY IN THE
UNIVERSITY OF PENNSYLVANIA; SURGEON TO THE PHILADELPHIA GENERAL
HOSPITAL AND ASSISTANT SURGEON TO T. E. UNIVERSITY HOSPITAL.

Carcinoma of the Splenic Flexure of the Colon.—HARTWELL (*Ann. Surg.*, 1917, lxvi) presents a report of 6 cases and a study of the literature. He says that the splenic flexure of the colon is the third most common site for colonic cancer. This growth tends to the production of obstruction, with indeterminate premonitory symptoms. This complication occurs acutely in nearly three-fourths of the cases coming to operation. A recognition of the foregoing facts and a more careful detailed study, with a possible exploratory operation, should lead to an early diagnosis in a majority of the cases and thus forestall acute complications. The probable operative mortality of all cases up to the present time is over 60 per cent., and the percentage of the prolonged cures is exceedingly low, 10 per cent. to 25 per cent. These appalling results are largely due to the delayed diagnosis, and an improper mode of attack. The latter should follow the principle of the two or more stage operation, with provision for external colonic drainage, either as a preliminary, or at the time of resection; always the former in the presence of serious obstruction or abscess formation. The distal portion of the transverse colon, the flexure, and the entire descending colon must be resected in order to obtain the requisite conditions for a secure anastomosis with an ultimate patency of the colonic lumen. Notwithstanding the meager success thus far obtained, attention to the lessons learned from the successes and failures of those who have worked in this field justifies the hope that this lesion may be as satisfactorily dealt with as cancer in other parts of the body.

Pituitary Gland and Generative Organs.—GOETSCH (*Surg., Gynec. and Obst.*, 1917, xxv, 229) says there is a close interrelationship in function between the pituitary and sex glands, a fact supported by abundant experimental evidence and by numerous observations on pituitary disturbances in the human subject. Overfunction of the pituitary anterior lobe is associated with overactivity of the sex glands. Deficiency of pituitary secretion in the individual is followed by under-

development and genital aplasia in the young and by sexual inactivity and retrogression in the adult. Primary alterations of function of the sex glands, as in pregnancy and after castration, are followed by pituitary hyperplasia and hypertrophy. The specific action of posterior lobe extract ("puitrin," "pituitary liquid") upon the smooth musculature of the uterus and bowel has led to the wide usage of this drug in obstetrical practice and in the treatment of intestinal paresis following abdominal operations. The administration of pituitary extracts is of distinct benefit in clinical states of pituitary underfunction.

The Physiological and Pathological Importance of the Parathyroid Gland from the Experimental Aspect.—VOEGLIN (*Surg., Gynec. and Obstet.*, 1917, xxv, 244) says that the parathyroid gland has a definite physiological function which is still incompletely understood. The presence of a minimum of parathyroid tissue in the body is essential for life and the continuation of normal metabolism. Parathyroid insufficiency seems to be characterized by an increased irritability of the nervous system to the galvanic current, which may be due to the withdrawal of soluble calcium salts from the blood and tissues. Parathyroid insufficiency leads to an alkalosis which is converted into an acidosis as a result of active tetany. Definite metabolic changes take place in animals after complete parathyroidectomy. Pregnancy puts an extra strain on the functions of the parathyroid, as evidenced by the appearance of tetany during this period in partially thyroidectomized animals. Tetany has been observed during lactation in animals with parathyroid insufficiency. Interruption of lactation was followed by recovery. The offspring of partially parathyroidectomized animals exhibit a marked increase in nerve irritability. An intravenous injection of soluble calcium or strontium salts or hydrochloric acid almost instantly removes the symptoms of tetany. However, tetany may reappear after this treatment and the life of such animals cannot be saved by the continued administration of calcium. The injection of parathyroid extract seems to have a temporary curative effect on tetany animals. Isotransplantation of parathyroids into animals with parathyroid insufficiency is usually successful. The spontaneous recovery from tetany in experimental animals is probably due to changes in their metabolism (acidosis) caused by the hyperactivity of the skeletal muscles during tetany. The experimental facts do not support the theory that eclampsia is due to hypoparathyroidism. A condition which might justly be termed hyperparathyroidism is known at the present time.

The Pineal Gland.—McCord (*Surg., Gynec. and Obst.*, 1917, xxv, 250) says that a clinical syndrome is to be associated with disturbances of the functions of the pineal gland. Because of the involution of the pineal at puberty, the constitutional manifestations of pineal pathology appear to be confined to prepuberal years. The essential characteristics (apart from pressure and neighborhood manifestations) are (a) early sexual development evidenced in the enlarged genitalia, pubic hair, general body hair, early change in voice; (b) precocious mental development, manifested in maturity of thought and speech; (c) general overgrowth of body to the extent that a child of six or seven years may

have the appearance of a child near puberty. The experimental extirpation of the pineal gland is surgically possible. The gland is not essential for the maintenance of life. The early symptoms following pinealectomy are attributable to the severe brain injury. No changes attend the removal of the gland in adult animals. As to the effect of pinealectomy in young animals, Sarteschi, Foa and Horrax respectively state that the removal of the gland leads to precocity of development. Exner and Boese and Dandy report no change after pinealectomy. The administration of pineal substance to young mammals is reported to hasten growth and sexual maturity. In unicellular organisms (paramecia) pineal extracts increase the rate of reproduction to more than double that of controls. In larval forms (ranidae) both growth and differentiation are hastened as a result of pineal feeding. The inference is allowable that the pineal gland is an organ of internal secretion whose functions, however, are of minor significance in the general activities of the endocrinous system.

The Endocrine Function of the Pancreas and its Relation to the Sex Life of Women.—CARLSON (*Surg., Gynec. and Obst.*, 1917, xxv, 283) says that all evidence supports the view that some substance or hormone secreted by the islands of Langerhans into the blood is necessary for utilization of sugar by the tissues. This function is specific for the pancreas. Other endocrine organs may influence sugar metabolism in a superficial way by altering the sugar mobilization (adrenals, thyroid) or by increasing or decreasing the rate of oxidation in the body general. The rest of the endocrine glands cannot maintain the power of the tissues to oxidize sugar in the absence of the pancreas, and the hypoactivity or hyperactivity of other endocrine glands do not produce actual diabetes in the presence of a normal pancreas. While the failure of the tissues to use sugar in the absence of the pancreas is the central and definitely established fact, there are probably other primary defects in the development of acidosis, lipemia, increased metabolism, lowered resistance to infection, etc. All the evidence points to the view that true diabetes mellitus in man is primarily the result of pancreatic deficiency (islets). There is, at present, no evidence of any specific relations of the endocrine functions of the pancreas to the gonads, male or female, or to menstruation, pregnancy, and lactation. Absolute diabetes induced after conception leads to death of the fetus. Absolute diabetes probably renders conception impossible. Partial diabetes under careful dietary control permits of normal sex life of women (menstruation, normal pregnancy, normal child, lactation), and pregnancy under such conditions does not aggravate the diabetes. But in the absence of such dietary control the pregnancy aggravates the diabetes in the mother, and uncontrolled diabetes in the mother is extremely injurious to the fetus. There is some evidence that in the late stages of pregnancy the fetal pancreas may function for the mother.

The Surgery of Bronchiectasis.—ROBINSON (*Surg., Gynec. and Obst.*, 1917, xxiv, 194) reports five complete resections of the lower lobe of the lung, with one death. Bronchiectasis is a chronic loathsome disease—generally regarded as incurable. The expectoration is disgustingly

profuse; consequently the afflicted loses employment, shuns society, becomes a recluse and not infrequently resorts to dissipation. He is pale and a trifle cyanotic. His fingers and toes are clubbed. He labors with early fatigue. He coughs spasmodically with varying persistency. Stooping, laughing, eating, hurrying, flood his trachea with pus and he retires, embarrassed, to drain himself of abundant sputum. In winter he is periodically ill with severe "colds" sometimes with bronchopneumonia, nor does the mildness of summer rid him of chronic cough. He may live many years until cerebral abscess, pneumonia, septicemia, amyloid disease, or hemorrhage happily ends his existence. Advanced bronchiectasis cannot be cured by medication, inhalations, intratracheal injections, intratracheal irrigations, climatotherapy or vaccines. Collapse therapy produced either by nitrogen, artificial pneumothorax or by surgical measures is not curative. Pulmonary arterial ligation is of more definite value as a preparation for lobectomy than as a curative measure *per se*. Excision of the diseased portion of one lung is the only curative treatment of advanced bronchiectasis. In the present status of the development of thoracic surgery, lung resections should be performed in two stages or three stages. The several-stage operation of the rib-resection type has been attended in the writer's experience with a 20 per cent. mortality. The operation of intercostal lobectomy has distinct technical advantages. When performed in one stage, an undue risk of life is incurred. The physiological advantages of the several-stage technic may yet be successfully combined with the technical advantages of the intercostal exposure.

THERAPEUTICS

UNDER THE CHARGE OF

SAMUEL W. LAMBERT, M.D.,

PROFESSOR OF CLINICAL MEDICINE IN THE COLLEGE OF PHYSICIANS AND
SURGEONS, COLUMBIA UNIVERSITY, NEW YORK.

Nephritis from the Stand-point of Urea Excretion.—MCLEAN (*Jour. Am. Med. Assn.*, 1917, lxi, 437) attempts to make clear what actually happens in the condition of urea retention. Urea retention in the sense in which the term is now generally used is not a continuous process of piling up of urea in the blood, due to inability of the kidneys to excrete the large amounts of urea formed in the body, but is applied to any condition associated with an abnormally high concentration of urea in the blood and is taken to indicate disturbed renal function. The kidneys may be able to excrete far greater amounts of urea than they are ordinarily called on to do, even in severe cases of nephritis, while the condition known as urea retention exists in these cases at the lower levels of protein metabolism just as it does at the higher, even though in the former instance the blood urea figure may be within normal limits. McLean reviews briefly the classic work of Widal and Javal